

WE CLAIM:

1. A personal hydration system, comprising:

a flexible fluid reservoir having a body portion with an internal compartment adapted to receive a volume of drink fluid, wherein the reservoir includes a selectively sealable fill port having an opening through which drink fluid may be added to the compartment and an exit port through which drink fluid may be selectively drawn from the compartment, wherein the reservoir is formed from a multilayered chemically resistant material that includes at least one chemically resistant layer comprising ethylene vinyl alcohol and at least one waterproof layer on each side of the at least one layer containing ethylene vinyl alcohol, wherein the chemically resistant layer is adapted to be resistant to at least mustard and sarin chemical agents; and

an elongate downstream assembly in fluid communication with the exit port and adapted to selectively dispense drink fluid to a user, wherein the downstream assembly comprises an elongate drink tube and at least one of a mouthpiece from which a user may selectively draw drink fluid from the compartment by sucking upon the mouthpiece and a fitting adapted to interconnect the drink tube with a gas mask.

2. The hydration system of claim 1, wherein the reservoir further includes at least one heat-sealable layer on each side of the at least one layer containing ethylene vinyl alcohol.

3. The hydration system of claim 1, wherein the reservoir includes a perimeter region that is sealed with a RF-welding process.

4. The hydration system of claim 1, wherein the at least one layer comprising ethylene vinyl alcohol has a thickness of less than 0.01 inch.

5. The hydration system of claim 4, wherein the at least one layer comprising ethylene vinyl alcohol has a thickness of less than 0.005 inch.

6. The hydration system of claim 1, wherein when exposed for 24 hours to mustard blister agent in a liquid concentration of 10 g/m² the reservoir is adapted prevent more than 0.047 mg/L of mustard blister agent from penetrating the reservoir and reaching the drink fluid contained therein.

7. The hydration system of claim 6, wherein when exposed for 24 hours to mustard blister agent in a liquid concentration of 10 g/m² the reservoir is adapted prevent more than 0.03525 mg/L of mustard blister agent from penetrating the reservoir and reaching the drink fluid contained therein.

8. The hydration system of claim 1, wherein when exposed for 24 hours to sarin nerve agent in a liquid concentration of 10 g/m² the reservoir is adapted prevent more than 0.0093 mg/L of sarin nerve agent from penetrating the reservoir and reaching the drink fluid contained therein.

9. The hydration system of claim 8, wherein when exposed for 24 hours to sarin nerve agent in a liquid concentration of 10 g/m^2 the reservoir is adapted prevent more than 0.006975 mg/L of sarin nerve agent from penetrating the reservoir and reaching the drink fluid contained therein.

10. The hydration system of claim 1, wherein the layers are co-extruded with each other.

11. The hydration system of claim 1, wherein the layers are formed as a multilaminate structure.

12. The hydration system of claim 1, wherein the reservoir is sufficiently clear that the internal compartment may be viewed from external the reservoir.

13. The hydration system of claim 1, wherein the elongate drink tube includes a proximal end region and a distal end region that is downstream from the proximal end region relative to the reservoir, and further wherein the hydration system further includes a quick-connect assembly adapted to selectively and interchangeably couple the distal end region of the elongate drink tube in fluid communication with the mouthpiece and the fitting.

14. The hydration system of claim 13, wherein the quick-connect assembly comprises:

a male coupling member having a shaft that includes a tip and which defines at least a portion of a fluid conduit, wherein the male coupling member includes a region distal the tip with a port through which drink fluid may selectively flow into or out of the quick-connect assembly, and further wherein the region includes a mount;

a female coupling member having a body with an opening sized to receive at least the tip of a male coupling member, wherein the opening is in fluid communication with a cavity that extends through the female coupling member to a region distal the opening that includes a port through which drink fluid may selectively flow into or out of the quick-connect assembly, wherein the region includes a mount; and

a lock member adapted to releasably and fluidly interconnect a male coupling member and a female coupling member, wherein the lock member is selectively configured between a locked configuration, in which the lock member is configured to retain the male and the female coupling members in fluid interconnection with each other, and an unlocked configuration, in which the lock member is configured to permit the male coupling member to be selectively removed from and inserted into the cavity of the female coupling member.

15. The hydration system of claim 14, wherein the lock member includes a resilient lock ring that is coupled to the female coupling member and includes a passage extending therethrough, wherein the lock ring is adapted to selectively engage and prevent removal of the shaft of the male coupling member when the shaft of the male coupling member is at least partially inserted into the passage, wherein the lock ring is selectively deformable between an unlocked configuration, in which the tip of the male coupling member may pass through the passage, and a locked configuration, in which the tip of the male coupling member may not pass through the passage, and further wherein the lock ring is biased to the locked configuration.

16. The hydration system of claim 15, wherein the lock member includes at least one release member adapted to configure the lock member to release the portion of the male coupling member upon receipt of a user-applied force to the release member.

17. The hydration system of claim 16, wherein the female coupling member includes at least one aperture through which the at least one release member at least partially extends.

18. The hydration system of claim 17, wherein the female coupling member further includes a guard that projects from the body to restrict unintentional urging of the at least one release member toward the lock member.

19. The hydration system of claim 17, wherein the female coupling member includes a pair of spaced-apart apertures, and further wherein the lock member includes a pair of release members that respectively extend at least partially through the pair of spaced-apart apertures.

20. The hydration system of claim 19, wherein the at least one release member is biased to extend at least partially through the aperture, and further wherein upon urging of the release member into the aperture, the lock member is urged to the unlocked configuration.

21. The hydration system of claim 1, wherein the elongate drink tube includes a proximal end region and a distal end region that is downstream from the proximal end region relative to the reservoir, and further wherein the hydration system further includes a quick-connect assembly adapted to selectively and interchangeably couple the proximal end region of the elongate drink tube in fluid communication with the exit port of the reservoir.

22. The hydration system of claim 1, wherein the hydration system further includes a pack with a pack compartment adapted to receive the reservoir and from which the elongate drink tube extends.

23. A personal hydration system, comprising:

a flexible fluid reservoir having a body portion with an internal compartment adapted to receive a volume of drink fluid, wherein the reservoir includes a selectively sealable fill port having an opening through which drink fluid may be added to or removed from the compartment and an exit port through which drink fluid may be selectively drawn from the compartment, wherein the reservoir is formed from a flexible, heat-sealable chemically resistant material; and

an elongate downstream assembly in fluid communication with the exit port and adapted to selectively dispense drink fluid to a user.

24. The hydration system of claim 23, wherein the downstream assembly comprises an elongate drink tube and at least one of a mouthpiece from which a user may selectively draw drink fluid from the compartment by sucking upon the mouthpiece and a fitting adapted to interconnect the drink tube with a gas mask.

25. The hydration system of claim 24, further comprising means for interchangeably connecting the drink tube with the mouthpiece and the fitting.

26. The hydration system of claim 23, further comprising means for interchangeably connecting the downstream assembly to the exit port.

27. The hydration system of claim 23, wherein the material comprises ethylene vinyl alcohol.

28. The hydration system of claim 27, wherein the material is sufficiently transparent for the internal compartment to be viewed from exterior the reservoir.

29. The hydration system of claim 23, wherein when exposed for 24 hours to mustard blister agent in a liquid concentration of 10 g/m^2 the reservoir is adapted prevent more than 0.047 mg/L of mustard blister agent from penetrating the reservoir and reaching the drink fluid contained therein.

30. The hydration system of claim 29, wherein when exposed for 24 hours to mustard blister agent in a liquid concentration of 10 g/m^2 the reservoir is adapted prevent more than 0.03525 mg/L of mustard blister agent from penetrating the reservoir and reaching the drink fluid contained therein.

31. The hydration system of claim 23, wherein when exposed for 24 hours to sarin nerve agent in a liquid concentration of 10 g/m^2 the reservoir is adapted prevent more than 0.0093 mg/L of sarin nerve agent from penetrating the reservoir and reaching the drink fluid contained therein.

32. The hydration system of claim 31, wherein when exposed for 24 hours to sarin nerve agent in a liquid concentration of 10 g/m² the reservoir is adapted prevent more than 0.006975 mg/L of sarin nerve agent from penetrating the reservoir and reaching the drink fluid contained therein.

33. The hydration system of claim 23, wherein the heat-sealable material is an RF-weldable material.